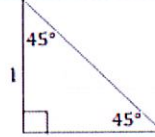
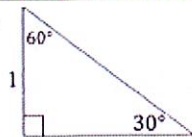


NO CALCULATOR ON THIS ENTIRE WORKSHEET

Use special right triangles to write the missing side lengths on each triangle.

Use the triangles above to state the **EXACT VALUE** of the trig functions **WITHOUT** using a calculator.

1. $\sin \frac{\pi}{6}$	2. $\cos \frac{\pi}{3}$	3. $\tan 60^\circ$	4. $\sin 45^\circ$	5. $\cos \frac{\pi}{4}$	6. $\tan \frac{\pi}{6}$	7. $\tan 45^\circ$
8. $\cos 30^\circ$	9. $\sin \frac{\pi}{3}$	10. $\csc 30^\circ$	11. $\sec \frac{\pi}{3}$	12. $\sec 30^\circ$	13. $\csc 45^\circ$	14. $\cot \frac{\pi}{4}$

Label the **UNIT CIRCLE** to help state the **QUADRANTAL EXACT VALUES**.

15. $\cos 90^\circ$	16. $\sin \frac{\pi}{2}$	17. $\cos \pi$	18. $\sin 2\pi$			
19. $\cos \frac{3\pi}{2}$	20. $\cos 0$	21. $\sin 180^\circ$	22. $\sin(-90^\circ)$			
23. $\sin 6\pi$	24. $\cos 9\pi$	25. $\tan \frac{\pi}{2}$	26. $\tan 2\pi$	27. $\tan 180^\circ$	28. $\sec 90^\circ$	29. $\csc 270^\circ$
30. $\cot 180^\circ$	31. $\csc(-270^\circ)$	32. $\tan \frac{3\pi}{2}$	33. $\sec 2\pi$	34. $\sec\left(-\frac{\pi}{2}\right)$	35. $\cot \frac{\pi}{2}$	36. $\csc 7\pi$

Name each **QUADRANT** described. (I, II, III, IV)

37. $\sin \theta > 0$ and $\cos \theta < 0$ (positive) (negative)	38. $\sin \theta < 0$ and $\cos \theta > 0$	39. $\sin \theta < 0$ and $\tan \theta > 0$	40. $\sec \theta > 0$ and $\csc \theta > 0$
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State the EXACT VALUE WITHOUT using a calculator. Leave answers in simplest radical form or state that the value is undefined.

41. $\cos \frac{3\pi}{4}$	42. $\sin 210^\circ$	43. $\cos \frac{11\pi}{6}$	44. $\tan 120^\circ$	45. $\sin \frac{5\pi}{3}$	46. $\tan \frac{4\pi}{3}$
47. $\tan \frac{5\pi}{4}$	48. $\sin 225^\circ$	49. $\tan 300^\circ$	50. $\tan \frac{7\pi}{4}$	51. $\tan 150^\circ$	52. $\cos \left(-\frac{5\pi}{6}\right)$
53. $\sin \frac{5\pi}{6}$	54. $\sin(-120^\circ)$	55. $\cos 240^\circ$	56. $\tan \frac{7\pi}{6}$	57. $\cos \frac{2\pi}{3}$	58. $\cos(-45^\circ)$
59. $\sin(-240^\circ)$	60. $\sin 135^\circ$	61. $\tan 135^\circ$	62. $\cos 150^\circ$	63. $\sin 315^\circ$	64. $\cos 300^\circ$
65. $\tan 330^\circ$	66. $\cos 225^\circ$	67. $\sin \left(-\frac{\pi}{6}\right)$	68. $\sin \frac{7\pi}{2}$	69. $\cos \frac{5\pi}{2}$	70. $\tan 5\pi$

Now, try a few reciprocal functions. You may want to draw a labeled picture for these.